

## **WHAT IS CLAIMED IS:**

1. An amino acid sequence comprising a diabetogenic epitope selected from the group consisting of isoforms of gliadin proteins or Glb1.
2. The amino acid sequence of claim 1, wherein said diabetogenic epitope comprises EEQLRELRRQ from Glb1.
3. The diabetogenic epitope of claim 1, comprising part of a larger peptide or protein that does not occur naturally in nature.
4. The diabetogenic epitope of claim 1, wherein said epitope is attached to a carrier protein, non-carrier protein, macromolecule or support.
5. The diabetogenic epitope of claim 4, wherein said diabetogenic epitope is attached to a support, said support comprising a bead, plate, dish, cover slip, slide, multiwell assay plate, or bio-assay chip.
6. A nucleotide sequence encoding a diabetogenic epitope from isoforms of gliadin proteins or Glb1.
7. The nucleotide sequence of claim 6, wherein said diabetogenic epitope is EEQLRELRRQ from Glb1.
8. A nucleotide sequence complementary to a sequence encoding a diabetogenic epitope or a portion thereof.
9. The nucleotide sequence of claim 6, said sequence comprising part of a larger nucleotide sequence.
10. The larger nucleotide sequence of claim 9, comprising one or more regulatory sequences.
11. The larger nucleotide sequence of claim 9, comprising a cloning vector.

12. The nucleotide sequence of claim 8, wherein said nucleotide sequence is part of a larger nucleotide sequence.
13. The larger nucleotide sequence of claim 12 comprising one or more regulatory sequences.
14. An isolated antibody capable of binding to Glb1 or one or more isoforms of gliadin proteins.
15. An isolated antibody capable of binding to a diabetogenic epitope of Glb1, or one or more isoforms of gliadin proteins.
16. The antibody of claim 15, wherein said diabetogenic epitope is EEQLRELRRQ.
17. The antibody of claim 14, said antibody comprising a monoclonal antibody.
18. The monoclonal antibody of claim 17, said antibody comprising an IgG antibody.
19. The antibody of claim 14, said antibody produced in the serum of an animal.
20. The antibody of claim 19, wherein said animal is a diabetic animal.
21. A kit comprising one or more of 1) a diabetogenic epitope, 2) a protein or peptide comprising a diabetogenic epitope, 3) a non-protein carrier or macromolecule comprising the diabetogenic epitope, 4) a support comprising the diabetogenic epitope, 5) a diabetogenic epitope attached to a non-covalent association agent, 6) a nucleotide sequence encoding a diabetogenic epitope or peptide or protein comprising the diabetogenic epitope, 7) a nucleotide sequence complementary to a nucleotide sequence encoding a diabetogenic epitope, 8) a nucleotide sequence complementary to a portion of a nucleotide sequence encoding a diabetogenic protein, or a combination thereof.
22. The kit of claim 21, wherein said diabetogenic epitope is from isoforms of gliadin proteins or Glb1.

23. The kit of claim 22, wherein said diabetogenic epitope is EEQLRELRRQ from Glb1.

24. The kit of claim 21, further comprising one or more beads, plates, dishes, coverslips, slides, multi-well assay plates, bioassay chips, which may be attached or unattached to the diabetogenic epitope, protein or peptide comprising the diabetogenic epitope, nucleotide sequence encoding the diabetogenic epitope, sequence complementary thereto, or fragment thereof.

25. The kit of claim 21, further comprising one or more primary antibodies capable of binding to the diabetogenic epitope, or protein comprising the diabetogenic epitope, one or more secondary antibodies that are capable of binding to the primary antibody, solutions, reagents, enzymes, or a combination thereof.

26. A method of screening foodstuffs to identify proteins in the foodstuff which are antigenic/immunogenic in a subject, or group of subjects comprising a pathological condition, the method comprising the steps of:

- a) processing the foodstuff to produce separated proteins, and;
- b) screening the separated proteins from step a) with an antibody containing mixture derived from one or more subjects having the pathological condition to identify proteins that are antigenic/immunogenic in the subject and that are present in the foodstuff.

27. A method of screening foodstuffs to identify antigenic/immunogenic proteins common in at least two subjects, or groups of subjects wherein each subject or group of subjects comprise different pathological conditions, the method comprising the steps of

- a) processing the foodstuff to produce separated proteins;
- b) screening the separated proteins from step a) with a first antibody containing mixture derived from one or more subjects having a first pathological condition;
- c) screening the separated proteins from step a) with a second antibody containing mixture derived from one or more subjects having a second pathological condition;
- d) comparing proteins binding to the first antibody containing mixture with proteins binding to the second antibody mixture to identify proteins common in at least two subjects, or groups of subjects with different pathological conditions, the proteins also

present in the foodstuff.

28. A foodstuff modified to reduce or eliminate one or more diabetogenic epitopes or proteins comprising diabetogenic epitopes.

29. The food or foodstuff of claim 28 modified to reduce or eliminate Glb1 or isoforms of gliadin proteins, or a diabetogenic epitope thereof.

30. The foodstuff of claim 28, said foodstuff comprising a genetically modified plant comprising a knockout of one or more diabetic epitopes or proteins comprising said one or more diabetic epitopes.

31. The foodstuff of claim 30, wherein said genetically modified plant comprises a wheat plant.

32. The foodstuff of claim 28, wherein said foodstuff comprises an inhibitory RNA nucleotide sequence that reduces or eliminates the production of one or more proteins comprising one or more diabetogenic epitopes.

33. A method of screening a subject for reactivity toward one or more food proteins comprising the steps of a) isolating blood from said subject; b) optionally purifying one or more components from said blood; c) contacting said blood with one or more food proteins or fragments thereof and d) measuring a biological response thereto.

34. The method of claim 33, wherein said biological response comprises binding of antibodies in said blood to one or more food proteins or fragments thereof.

35. The method of claim 33, wherein said method is a T-Cell proliferation assay.